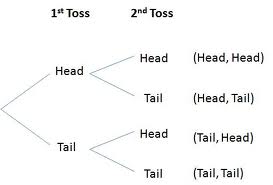
Probability

**Theory** – calculate based on…… outcomes and analysis

Outcome tree

[](http://www.google.com/imgres?imgurl=http://denicesmathworld.files.wordpress.com/2011/04/tree-diagram11.jpg&imgrefurl=http://denicesmathworld.wordpress.com/2011/04/18/probability-vocabulary/&h=333&w=491&sz=14&tbnid=xrTBcwSDInwgOM:&tbnh=96&tbnw=141&zoom=1&docid=yz8SXmtDeCvLCM&sa=X&ei=sF-yT4CnBYac2AWpu8TpCA&ved=0CEkQ9QEwAQ&dur=3635)

1st toss – P(H) = P(T) =

2nd toss P(2 Heads) = P(2 Tails) = P(1 Head and 1 Tail) =

Dice –

With one die the probability is

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Roll a 1 | Roll a 2 | Roll a 3 | Roll a 4 | Roll a 5 | Roll a 6 |
|  |  |  |  |  |  |

Suppose you roll a pair of dice and add the spots.

In each cell, insert the sum of the results.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Die 1/Die 2 | Roll a 1 | Roll a 2 | Roll a 3 | Roll a 4 | Roll a 5 | Roll a 6 |
| Roll a 1 |  |  |  |  |  |  |
| Roll a 2 |  |  |  |  |  |  |
| Roll a 3 |  |  |  |  |  |  |
| Roll a 4 |  |  |  |  |  |  |
| Roll a 5 |  |  |  |  |  |  |
| Roll a 6 |  |  |  |  |  |  |

In the table below, please fill in possible outcomes (sum of the two dice). Record the number of times each occurs in the table above. What is our denominator – what is the total possible outcomes?

|  |  |  |  |
| --- | --- | --- | --- |
| Sum is = to: | How many times in the table above? | What is the probability of each sum? (t/36) |  |
| 1 |  |  |  |
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| 13 |  |  |  |
| 14 |  |  |  |

**Experimental** – collect data and estimate it.

We will do with cups?

How can they land?

Determine Probability of how a paper cup will land

Three groups – using short cups – 30 times – record data

Each group will do 2 of the 3 tests

|  |  |
| --- | --- |
|  | PREDICTED IMPACT – MORE LIKELY TO…………… |
| Taller Cup |  |
| Short cup  with lid |  |
| Weighted in the bottom short cup |  |